



*Benha University.
Faculty of Medicine.
Department of Microbiology & Immunology.*

Course Specifications

Course title: MICROBIOLOGY AND IMMUNOLOGY

Code: MED 0707

Academic Year (2009 – 2010)

- Department offering the course: MICROBIOLOGY AND IMMUNOLOGY
- Academic year of **M.B. & B.Ch.** program: third year (2010 – 2011).
- Date of specification approval: department council No. 11, date 20/7/2010.

Faculty council No., date .../.../2010

A) Basic Information:

- Allocated marks: 200 marks.
- Course duration: 30 weeks of teaching.
- Teaching hours: 5 hours / week = 150 hrs total teaching hours.

	Hours / week	Total hours
1- Lectures	3 hrs/week for 30 weeks	90 hrs
2- Practical	2 hrs/week for 7 weeks	60 hrs
Total	30 weeks	150 hrs

B) Professional Information:

1- Overall Aim of the Course:

1.1. To educate students about the basic features of general bacteriology, virology, microbial genetics and mycology and to provide students with an understanding of the immune system, its protective functions and its role in the pathophysiology of infectious and non-infectious diseases.

1.2. To familiarize students with the common infections and diseases of medical importance, their microbial causes, as well as laboratory diagnosis, treatment, prevention and control of such diseases.

1.3. To enable the students to practice the principles of sterilization and infection control.

2- Intended Learning Outcomes (ILOs):

2.1. Knowledge and understanding:

By the end of the course, students should be able to:

- 2.1.1. Illustrate general bacterial morphology, physiology and genetics.
- 2.1.2. Understand the host parasite relationship and microbial pathogenesis.
- 2.1.3. Explain the physiology of the immune system, its beneficial role, its interaction with tumors, its deficiency conditions, as well as its detrimental role in hypersensitivity, autoimmunity and transplant rejection
- 2.1.4. Describe the morphology, culture, antigenic structure and virulence factors of microorganisms of medical importance
- 2.1.5. Recognize the most important infectious clinical conditions and outline the diagnosis, treatment, prevention and control of the most likely organisms causing such diseases
- 2.1.6. Describe the most important methods of decontamination, sterilization and principles of infection control.
- 2.1.7. Describe the basics of antimicrobial chemotherapy and resistance.
- 2.1.8. Understand the impact of molecular technology in microbiology and immunology.

2.2. Practical and Clinical Skills

By the end of the course, students should be able to:

- 2.2.1. Identify medically important bacteria based on microscopic examination of stained preparations.
- 2.2.2. Perform a Gram stain and a Ziehl-Neelsen stain.
- 2.2.3. Identify culture media and biochemical tests commonly used for bacterial identification and distinguish positive and negative results.
- 2.2.4. Perform various sterilization processes and simple infection control measures

2.3. Professional Attitude and Behavioral skills:

By the end of the course, students should be able to:

- 2.3.1. Demonstrate Respect for patients' rights and involve them and /or their caretakers in management decisions.
- 2.3.2. Adopt an empathic and holistic approach to the patients and their problems.
- 2.3.3. Respect the role and the contributions of other health care professionals regardless their degrees or rank (top management, subordinate or colleague).
- 2.3.4. Conduct counseling sessions for prevention & control of different conditions for healthy individuals, for patients as well as their families .

2.4. Communication skills:

By the end of the program the graduate will be able to:

- 2.4.1. Communicate clearly, sensitively and effectively with patients and their relatives, and colleagues from a variety of health and social care professions.
- 2.4.2. Explain to the patient or the patients relatives the nature of illness, the diagnostic plan, the treatment options and the possible complications in such a way that is easily understood to provide appropriate basic health education.

2.4.3. Show sympathy to the patients and their relatives in situations of stress and grief.

2.4.4. Cope up with difficult situations as breaking news.

2.4.5. Respect patients and their relatives, superiors, colleagues and all members of the health profession.

2.5. Intellectual Skills:

By the end of the course, students should be able to:

2.5.1. Interpret results of microbiological, serological and molecular tests.

2.5.2. Interpret microbiological, immunological and molecular reports.

2.5.3. Formulate a systematic approach for laboratory diagnosis of common infectious clinical conditions and select the most appropriate and cost-effective tool leading to the identification of the causative organism.

2.5.4. Evaluate according to evidence the causal relationship of microbes and diseases.

2.5.5. Categorize a microorganism as a bacterium, virus or fungus according to standard taxonomy.

2.5.6. Appreciate the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage.

2.6. General and transferable Skills:

By the end of the course, students should be able to:

2.6.1. Establish life-long self-learning required for continuous professional development.

2.6.2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.6.3. Establish effective interpersonal relationship to Communicate ideas and arguments .

2.6.4. Retrieve, manage, and manipulate information by all means, including electronic means.

2.6.5. Present information clearly in written, electronic and oral forms.

2.6.6. Establish effective interpersonal relationship to Communicate ideas and arguments.

2.6.7. Apply the principles of statistical methods for collection, presentation & analysis of all types of data .

3- Course contents:

	Subject	Lectures (hrs)	Practical (hrs)	Total (hrs)	% of Total
1	Introduction to Microbiology	1	0	1	0.7%
2	Bacterial Cell Structure	1	0	1	0.7%
3	Growth requirement & Microbial metabolism	1	0	1	0.7%
4	Bacterial virulence	1	0	1	0.7%
5	Host parasite relationship	1	0	1	0.7%
6	Bacterial genetics & Genetic engineering	3	0	3	2.0%
7	Antimicrobial chemotherapy	2	0	2	1.3%
8	Safety procedure & Microscope	0	2	2	1.3%
9	Film preparation and different stains	0	6	6	4.0%
10	Disinfection and Sterilization	0	4	4	2.7%
11	Culture media	0	4	4	2.7%
12	Basic Immunology	10		10	6.7%
13	Serological tests	---	4	4	2.7%
14	Staphylococci , streptococci, and Neisseria	4	4	8	5.3%
15	Corynebacteria	1	2	3	2.0%
16	Bacillus Group	1	2	3	2.0%
17	Clostridium	2	2	4	2.7%

18	Mycobacteria	2	2	4	2.7%
19	Gram negative bacilli	4	6	10	6.7%
20	Hypersensitivity	1	0	1	0.7%
21	Autoimmune diseases	1	0	1	0.7%
22	Immunodeficiency diseases	1	0	1	0.7%
23	Tumor immunology	1	0	1	0.7%
24	Transplantation immunology	1	0	1	0.7%
25	Brucella Haemophilus Yersinia & Bordetella	3	2	5	3.3%
26	Spirochaetes	1	2	3	2.0%
27	Rickettsia, Chlamydia and Miscellaneous organisms	3	0	3	2.0%
28	Mycoplasma & Actinomycetes	1	0	1	0.7%
29	General virology	5		5	3.3%
30	Laboratory diagnosis of viral infections	0	2	2	1.3%
31	DNA viruses	5	0	5	3.3%
32	RNA viruses	6	0	6	4.0%

33	Hepatitis viruses	2	0	2	1.3%
34	HIV infection	1	0	1	0.7%
35	Oncogenic viruses	1	0	1	0.7%
36	Mycology	4	2	6	4.0%
37	Nosocomial infection and Infection control	3	2	5	3.3%
38	Applied microbiology	4	4	8	5.3%
39	Revisions	12	8	20	13.3%
Total		90	60	150	100%

4- Teaching and learning methods:

METHODS USED:

1. Lectures.
2. Practical classes
3. Small group discussion with case study and problem solving.
4. Assay (using library & internet)
5. Bureau hours.

TEACHING PLAN:

Lectures: 90 lectures

Practical classes: 60 practical classes

Time plain:

Item	Time schedule	Teaching hours	Total hours
Lectures	3 Times/week (each time 1 hour)	90 hours	60%
Practical classes	2 Hours/ week	60 hours	40%
Total	5 hrs/week	150 hours	100%

5- Students Assessment methods:**5-A) ATTENDANCE CRITERIA:**

1. Practical attendance
2. Log book

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge acquisition, including MCQs and problem solving
Oral examination	To assess understanding and stability of knowledge given, attitude and presentation.
Practical examination	To assess practical skills.

5-C) TIME SCHEDULE:

Exam	Week
2- Mid-year exam	at end of first term (January)
5- Final exam	at end of second term (May-June)

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
1- Mid-year	40	20%
2- Final exam:		
a- Written	100	50%
b- Practical	30	15%

c- Oral	30	15%
6- Assignments & other activities	-----	-----
Total	200	100%

- The minimum passing score is **120 marks** provided at least **30 marks** are obtained in the final written examination.

- Passing grades are: EXCELLENT >85%, VERY GOOD 75- <85%, GOOD 65- <75% and FAIR 60-<65%.

FORMATIVE ASSESSMENT:

- Student knows his marks after the Formative exams.

5-E) Examination description:

Examination	Type	Description
Mid-year Examination	1. Written	A one-hour written paper composed of short essay-type questions and MCQs.
Final Examination	2. Written	A two-hour written paper composed of short essay-type questions, MCQs and Case study
	3. Practical	Spots 10 spots including slides, culture media, biochemical reactions, serological tests and instruments. On each specimen, a small question should be answered (quiz).
	4. Oral	One oral examination station with 2 staff members (10-15 minutes: 4-5 questions)

6- List of references:

6.1- Basic materials:

1. Medical Microbiology: Department book and practical manual.
2. Lectures on Medical Virology: Department book.
3. Basic Immunology: Department book.

6.2- Essential books (text books):

1. Jawetz, Melnick and Adelberg's *Medical Microbiology*
2. *Mackie & McCartney Practical Medical Microbiology.*
3. Abul K. Abbas *Cellular and molecular immunology.*

6.3- Recommended books:

1. Microbiology an introduction
2. Lpincott's Microbiology illusterated review.

6.4- Periodicals, Web sites, etc:

1. asmnews@asmusa.org
2. <http://www.phage.org/black09.htm>
3. http://www.microbe.org/microbes/virus_or_bacterium.asp
4. <http://www.bact.wisc.edu/Bact330/330Lecturetopics>
5. http://whyfiles.org/012mad_cow/7.html
6. <http://www.microbelibrary.org>
7. <http://www.hepnet.com/hepb.htm>
8. http://www.tulane.edu/~dmsander/Big_Virology/BVHomePage.html
9. <http://www.mic.ki.se/Diseases/c2.html>
10. <http://www.med.sc.edu:85/book/welcome.htm>
11. http://www.bioiogy.arizona.edu/immunology/microbiology_immunology.html

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Faculty lectures halls: 3
- Department lectures halls: 1
- Department Equipped Laboratories :2

Course coordinator: Prof Dr. Ahmed Omar

Head of Department: Prof Dr. Ahmed Omar

Date: 2010 – 2011.

TEMPLATE FOR COURSE REPORTS

Benha University
Faculty of Medicine
Department of

Course Report
Academic Year 2009 – 2010

A- Basic Information:

- 1- Course title and code:
- 2- _____ year of M.B. & B.Ch. Program
- 3- Allocated marks
- 4- No. of hours:

Similar to Course Specification

5- Teaching staff:

- a- Number of teaching staff categories (Professors, Assistant professors, Lecturers and assistant staff (Assistant lectures and demonstrators).
- b- Student / staff / course Ratio (Academic year or round for clinical departments)

6- Course coordinator

7- External evaluator

B- Statistical Information:

Number of students starting the course		
Number of students completing the course		Number (% of starting No.)
Number of fail students		Number (% of completing)
Number of pass students		Number (% of completing)
Grades	Excellent	Number (% of pass)
	Very good	Number (% of pass)
	Good	Number (% of pass)
	Fair	Number (% of pass)

C- Professional Information:**1- Course topics taught:**A) Lectures:

Topics	Specified hours	Actual hours	Lecturer(s)
1-			
2-			
Etc			

- Percent of specified topics actually covered (> 90% or 70 – 90% or < 70%)
- Specified topics that were not taught and justification (Reasons in details):
 -
 -
- Taught topics other than those specified & justification (Reasons in details):
 -
 -

B) Practical:

Topics	Specified hours	Actual hours	Lecturer(s)
1-			
2-			
Etc			

- Percent of specified topics actually covered (> 90% or 70 – 90% or < 70%)
- Specified topics that were not taught and justification (Reasons in details):
 -
 -
- Taught topics other than those specified & justification (Reasons in details):
 -
 -

C) Tutorials / small group discussions:

Topics	Specified hours	Actual hours	Lecturer(s)
1-			
2-			
Etc			

- Percent of specified topics actually covered (> 90% or 70 – 90% or < 70%)
- Specified topics that were not taught and justification (Reasons in details):

-
- Taught topics other than those specified & justification (Reasons in details):
-

2- Teaching and learning methods:

Method specified	Applied or not	Comments
1- lectures		
2- Practical		
3- Tutorials		
4- etc		

- Methods that were not used and justify:
-
- Methods used other than those specified and justify:
-

3- Student assessment:

a- Methods of assessment

Method specified	Total Marks (% of Total Marks)	
	Specified	Actual
1- Written examination		
2- Oral examination		
3- Practical		
4- etc		
Total		

- Justify any deviation from specified

b- State the rules applied for the selection of the examination committee.

State the names of the members of the examination committee.

c- State the involvement of the external evaluator in:

- The match between the examination and the topics taught.
- The existence of grading criteria in examination sheets
- The allocation and distribution of marks and weighting
- Effectiveness of the overall assessments in measuring the achievement of the intended learning outcomes (ILOs).

4- Facilities and teaching materials:

Facilities & Teaching Materials	Totally Adequate	Partially Adequate	Inadequate	Impact on Delivery of the course Or achieving ILOs
1- Lecture halls				
2- A-V aids				
3- Laboratories				
4- Equipments				
5- Specimens				
6- Library				

7- etc				

Identify inadequacies, together with any problems in the delivery of the course or achieving the ILOs.

5- Administration constraints:

State any administrative constraints related to teaching and learning e.g. lack of:

- Some facilities or funds
- Teaching aids
- Site visits
- Qualified personnel for laboratory and administration
- Management problems or regulations, which impeded the delivery of the course and the achievement of the ILOs.

6- Results of course evaluation by students:

- Method used e.g. Questionnaires, interviews, focus group etc.
- State the main points e.g. teaching, facilities, assessments.....
- Achievement of Course's ILOs.
- Response to any criticisms by the faculty members delivering the course, together with their proposals for dealing with those issues.

7- External evaluator's comments:

- State the issues raised by the external evaluator
- Responses from the faculty members delivering the course, together with their proposals for dealing with those issues.

8- Course enhancement:

a- Previous Action Plan

Specified Action	Status Completed or Not	Reasons for non-completion
1-		
2-		

Write the issues not handled from those raised in the previous report and the reasons for overlooking such issues.

b- Action plan for program enhancement over the next academic year (200X – 200Y):

Action Required	Completion date Or Time Schedule	Person Responsible
1-		
2-		

- **Add actions not completed in the previous action plan.**
- **The action plan is fundamental to the success of the quality system.**

- It appears at the end of the report, because it is the result of all of prior analysis.
- Enhancement can only take place if issues are identified and then acted upon and resolved.
- The action plan identifies the issues, prioritizes them and dictates the necessary action to be taken.
- It is also clearly places the responsibility for the implementation of the action and the resolution of the associated issues, in a given time scale on named individuals.

Course Coordinator:

Signature

Date: / / 200